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ABSTRACT

This study used a variation of the two-child communication situation in order to determine in what way, and how successfully, a small set of schoolrelated relational concepts would be communicated by inner-city elementary school black children. Included for comparative purposes was a test of comprehension of the standard version of the concepts. Finally, a qualitative analysis of the language and questioning behavior that occurred in the two-child communication task was also made. Subjects of the study included 54 second grade and 38 fourth grade black children from an economically-depressed inner-city area of New York City. All subjects were native speakers of English. The results indicate that no special "black dialect" way of expressing basic relational concepts by elementary school children emerged from the two-child communication task, although grammatical forms of black dialect were occasionally observed. This finding would seem to indicate that there is no well-defined group of nonstandard concept rules to be used by classroom teachers in helping their black elementary school students "learn" basic concepts. Comprehension and production of basic concepts are apparently not tasks of equal difficulty for black elementary school children. Thus, children often may appear to understand what is being said, but may not be able to say it for themselves or communicate it to others. (Author/JM)

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The Comprehension and Communication of Relational Concepts by Inner-City Children*

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In the past, there has been conflicting evidence and opinion on the relationship between the comprehension and communication of basic concepts by elementary-school black children. Some recent studies by psycholinguists such as Fraser, Bellugi & Brown (1963) using white preschool children, Lovell & Dixon (1967) using British preschool and elementary school subjects, and Stern & Bryson (1970) with Mexican-American preschoolers have all found that comprehension precedes in development and is easier than the actual production and communication of grammatical distinctions. Studies of the free dialect of black children by such sociolinguists as Stewart (1967) and Labov (1970) has led them to suggest that young inner-city blacks may have a unique pattern in which the production of concepts in their own dialect in peer situations might be superior to the comprehension of these same concepts in Standard English forms in school situations.

The present study used a variation of the two-child communication situation in order to determine in what way, and how successfully, a small set of school-related relational concepts would be communicated by inner-city elementary-school black children. Included for comparative purposes was a test of comprehension of the standard version of the concepts.

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Finally, a qualitative analysis of the language and questioning behavior that occurred in the two-child communication task was also made.

Procedure

Subjects

Subjects of the study included fifty-four second-grade and thirty-eight fourth-grade black children from a public school in an economically-depressed inner-city area of New York City. All of the second-graders were seven years old and all fourth-graders were nine. All subjects were native speakers of English, and none had ever repeated a year in any grade.

Tasks

a) Comprehension Task.

In order to test for comprehension of a small set of Standard English concepts that occurred with great frequency in many of the often-used elementary-school textbooks, a group of 10 relational concepts of space, time and quantity were taken from the Boehm Test of Basic Concepts (Boehm, 1970). These concepts are listed on the bottom of the first page of the handout.* The complete Boehm Test consists of 50 relational concepts which deal mainly with space, time and quantity. Each concept is tested using a panel of three drawings, and the subject must mark an X on the picture verbalized by the Experimenter. For example, on the handout the E says, "Look at the doors. Mark an X on the door that is closed."

For this study the 10 pictorial items plus one warm-up item were cut out of a copy of the Boehm Test, with Dr. Boehm's permission, and in

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*Concepts used in the tasks:

1. at the top
2. through
3. next to
4. second
5. most
6. half
7. behind
8. in a row
9. medium-size
10. in the center of

randomized order, the test items were pasted onto sheets of paper, and enough copies of this test were xeroxed for each subject.

b) Communication Task.

In the two-child communication task a black Experimenter and one child, who served as the Speaker, sat on one side of a small table, and the child who served as the Listener sat on the other side, separated from the Speaker and the Experimenter by a vertical opaque screen (as shown in the handout). Each of these three individuals had in front of him a set of the toy objects required for each particular task item and a small bowl. From his set of objects, the Experimenter picked up the one characterizing the particular relational concept (e.g., the middle flower, the circle next to the truck) and put it into the bowl in front of him. The Speaker's task was then to put the corresponding object from his own set into his bowl, and then to name or to describe the concept in the best way he could for the Listener behind the screen, who was, in turn, to select this same object from his set and put it into his bowl. The Listener was encouraged to ask questions of the Speaker if he did not hear or understand the concept instruction. All verbal interchanges that occurred in the task were tape-recorded, and an Observer stood at the side of the screen near the Listener noting all relevant information regarding object selection.

A random half of the subject pairs received the communication task first followed immediately by the comprehension task, and the other pairs were administered the tasks in the reverse order.

The adequacy of the Speaker's instructions was later judged independently by two judges using typed protocols which were verbatim from the tapes. Interrater reliability for these two judges averaged .98. Accuracy of

Speaker instructions was represented by two scores calculated for each individual Speaker by these two judges. One score consisted of the total number of instructions in which the actual concept (or some paraphrase of the concept) was verbalized. A second score was a sum of correct concept directions plus any directions correctly describing the position of the target object in the array of objects, and thus represented a total number of adequate instructions (concepts plus positions) from which a Listener could have selected the target object unambiguously.

Results

The number of items, corrected for guessing, that the Speaker had gotten right on the concept comprehension task was compared with the number of corresponding items for which he had given adequate instructions (either concepts or positions) to his Listener in the communication task. A chi-square test showed a significant difference between these Speaker scores for comprehension and communication of the relational concepts ($p < .001$). For forty-three of the forty-six Speakers in this experiment the corrected comprehension score was higher than was their communication score. One Speaker, a second-grader, was able to correctly communicate more concepts in his own idiosyncratic way, than he correctly comprehended in the formal Standard English version, and two Speakers, both fourth-graders, received perfect scores in both the comprehension and communication tasks. Thus, it was found that for a significant majority of the subjects comprehension was better, even in a formalized paper-and-pencil task, than was free production in a more gamelike situation. This finding was in accord with all previous related research in this area, but was contrary to the suggestion

of Labov (1970) that blacks would probably excell in the task which permitted them to describe concepts in their own way.

A second important question was whether the random half of the Speakers who were administered the concept comprehension task before they were required to communicate these same ten concepts in the two-child situation were able to use this previous exposure to the concepts to communicate more of them correctly than would the group of Speakers who did not have this previous exposure to the concepts in this experimental setting. A two-way analysis of variance (see handout) showed that the fourth-grade Speakers as a group communicated significantly more correct concepts than did the second-graders (between-grades variance significant at $p < .001$), and also that it was only the fourth-grade Speakers who had been administered the comprehension task first who were able to give more correct concept instructions to their Listeners (interaction effect significant at $p < .001$). In fact, the second-grade Speakers who were given the comprehension task first gave slightly fewer correct concept instructions than did their classmates who went into the communication task with no previous exposure to the concepts. This general inability of the group of second-grade Speakers to profit from these previously-heard adult-spoken versions of the correct concepts is especially interesting in light of the fact that three second-grade Speakers who were administered the Comprehension Task first noticed the similarity between its content and that of the Communication Task and commented on this to the Experimenter. In none of these cases of the three second-grade Speakers who noticed and verbalized the similarity of the communication items to the previously-administered Comprehension Task items did this verbalization result in any correct concept instructions given for future communication items.

In an attempt to determine whether the poor performance on the two-child communication task might have been a result of distractions introduced by the toy objects used in the task, five pairs of second-grade subjects (three of the poorest-performing pairs on the original two-child task and two average pairs) were brought back to the testing room after the tests had been administered to all subjects in the study, and were re-administered the items using the same toy objects but as comprehension items, with the Experimenter speaking the correct concept instructions, and the two children both serving as Listeners and selecting the target objects. In this situation, all these ten subjects received either perfect or near-perfect scores, as they had in the original paper-and-pencil comprehension task. This gives some evidence that the use of the toys and the novel two-child situation was probably not the major factor leading to poor child communication, but that the difficulty lay in the communication process itself.

Language Analysis

The language analysis of the two-child communication data showed Speaker instructions to be quite short and standard in form. Speaker uterances for first-time instructions (i.e., instructions given before any Listener questioning began) averaged eight words in length. There was little variety in the grammatical form of the directions given by the Speakers, and, even though there were quite a few instances of black dialect grammatical forms found in the speech of some of the Speakers, there were very few novel expressions of the concepts themselves. Most of the Speakers who used the concepts used the same terms for these concepts as used in the Boehm Test (1970). The two major exceptions to this were the Speakers'

more frequent use of "middle-sized" instead of Boehm's "medium-sized," and "middle" instead of "center."

In general, communication in the two-child situation was not very effective. Even though the subjects almost all obtained perfect or near-perfect scores on the comprehension task, only 50% of the instructions given by the second-grade Speakers in the communication task were judged to be adequate (concepts or positions). The fourth-grade Speakers were somewhat more successful, since 76% of their instructions for the 10 relational concepts were adequate. Of the instructions judged to be "inadequate," most were not actually erroneous in the sense that the child described the wrong concept; instead, the most frequently-found types of Speaker errors were the type of ambiguous or incomplete instructions that did not give the Listener enough information to select the target item without questioning. For example, one item consisted of three small lined cards each with a gold star. One card had its star at the bottom, the other in the middle and the third at the top. The correct concept was "the star at the top." Several Speakers directed their Listener to select "the card with the star," giving no mention of the position of the star on the card, and hence not communicating the concept.

Even though the Speakers were often not very successful as communicators, the Listeners were even less successful as initiators of good questions. Listeners questioned only slightly more than one-quarter of the inadequate instructions they received from their Speaker. Even in the case of obviously ambiguous instructions such as the previously-mentioned example of the card with the star on top, Listeners often chose objects seemingly at random rather than question these instructions. Even though Experimenter intervention was resorted to only in cases where

a communication breakdown was imminent, almost half of the questions that occurred in the second-grade group had to be encouraged or initiated by the Experimenter. Only about one-eighth of the fourth-graders' questions had to be assisted or encouraged in this way, however.

When Listeners did manage to ask a good question, the Speakers as a group tended to be quite unsuccessful as answerers. Only about one-fifth of the second-grade Listeners' good questions received helpful answers, as compared with somewhat fewer than half in the case of the fourth-grade Speakers.

Of the group of 21 good answers given by the Speaker subjects upon being questioned by the Listener, all these good answers resulted in correct object selections by the Listeners. Thus, the breakdown in task performance in the two-child communication situation was not in any failure of the Listeners to be able to follow directions, but was a joint function of the Speakers' inability to produce good instructions and the Listeners' inability or unwillingness to ask questions when an obviously inadequate instruction had been received. Krauss and Glucksberg (1969) state that Listener proficiency develops earlier than does Speaker proficiency. Their study, however, used as the only measure of Listener success the ability to select the correct object described by the Speaker. If the ability to question inadequate Speaker instructions can be considered an additional criterion of Listener proficiency, the present study shows that Listeners share with Speakers the responsibility for many communication failures. It may be the case that the ability to ask appropriate questions following inadequate instructions develops even later than the ability to give adequate instructions.

Implications for Education

Several educational implications arise from the present study. First, no special "black dialect" way of expressing basic relational concepts by elementary school children emerged from the two-child communication task, although grammatical forms of black dialect were occasionally observed. This finding would seem to indicate that, in contrast to the list of grammar and pronunciation differences found by Labov (1967) to be potential sources of reading problems of dialect speakers, there is no well-defined group of nonstandard concept rules to be used by classroom teachers in helping their black elementary school students "learn" basic concepts. It is true, however, that the concepts used in this study were already easily comprehended by the great majority of the subjects. It might be the case that more difficult or less frequently-used concepts might have nonstandard forms among elementary-school dialect speakers, or that these relational concepts might not be understood in their standard forms by kindergarten or prekindergarten dialect speakers. It is quite possible, however, that many subjects may have regarded the communication task as a formal school-related situation, and therefore used "school talk" instead of dialect. Some evidence that this did not happen with all subjects is given by the fact that some dialect sentences were found to occur.

Another implication arises from the finding that comprehension and production of basic concepts are apparently not tasks of equal difficulty for black elementary school children. Thus, children often may appear to understand what is being said, but may not be able to say it for themselves or communicate it to others. It is true that the two-child communication task, with its toy objects and its gamelike aura, is different from anything

encountered in the traditionally-oriented elementary-school classroom. In spite of these differences, however, there exists some independent evidence that the passive recognition of information is a much simpler task than is its production. Two studies, one by Meissner, Fish and MacGinitie (1972) and the other by Stern & Bryson (1970), used the same items for both the comprehension and the production versions of the test with kindergarteners and found comprehension to be easier. The main implication from this finding seems to be the need for more practice in oral communication. Teachers should have children verbalizing concepts and ideas both to each other and to the teacher. A recent book by Gartner, Kohler & Riessman (1971) has reviewed the effects of programs in which children have learned by teaching other children, and language specialists such as Cazden (1971) have described the use of this two-child communication situation in preschool language programs in England. This suggestion of more inter-child verbalization would seem to be in keeping with the emphasis on more individualization in the classroom, and would seem to be especially relevant for the open classroom.

The poor performance of the Listeners in questioning Speaker instructions also has implications for the classroom. Even in the many cases where the Listeners of the present study had not been given accurate or sufficient information to select the correct object in the two-child communication task, they chose to guess rather than to ask for more information. Therefore, a teacher cannot assume that just because children do not ask about classroom information, that they understand it. This finding of Listener reluctance to question the Speaker seems to imply that children not only need to feel free to ask questions, but might benefit from being taught how to extract necessary information by questioning, as well as by having

more practice in teaching-learning exchanges with peers. This is especially important because a child who either cannot or does not question things he does not understand will become gradually overwhelmed and confused as time goes on and he is more and more unprepared for new knowledge.

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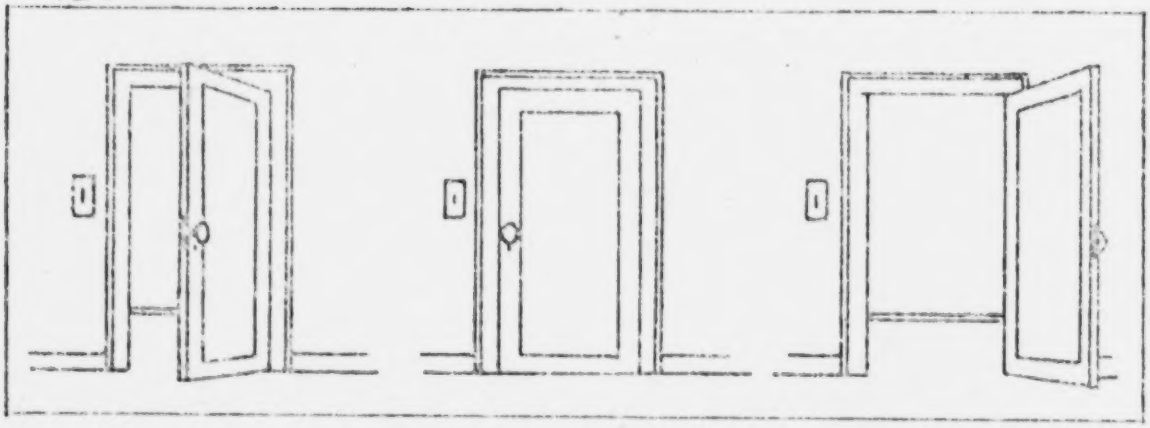

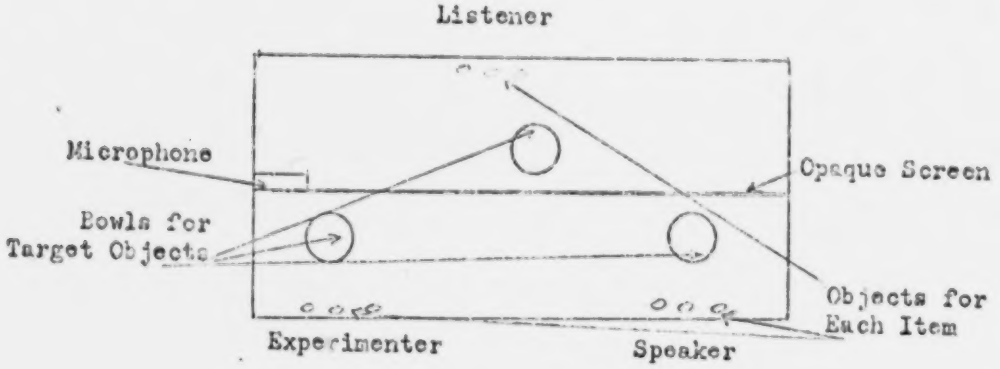

Concepts Used in the Tasks

1. at the top
2. through
3. next to
4. second
5. most
6. half
7. behind
8. in a row
9. medium-size
10. in the center of

Table 1

Chi Square Comparison of Comprehension and Communication Abilities of Speaker Subjects

	Number of Speakers Scoring Higher on Comprehension Task Than on Communication Task	Number of Speakers Scoring As Well or Better on Communication Than on Comprehension Task
2nd Grade	26	1
4th Grade	17	2
Total	43	3

$\chi^2 = 34.78$, $p < .001$

Table 2

Means and Standard Deviations of Correct Concept Instructions Given by Speakers Before and After Administration of the Concept Comprehension Task

	Before CCT			After CCT		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD
2nd Grade	17	2.65	2.86	10	1.80	1.25
4th Grade	10	3.20	1.83	9	6.44	2.24

Note.—Maximum possible score= 10.

Table 3

Two-Way Analysis of Variance of Correct Concept Instructions Given by Speakers Before and After Administration of the Concept Comprehension Task

Source	df	SS	MS	F
Between Grades	1	64.41	64.41	20.91*
Between CCT Order	1	14.71	14.71	4.78
Interaction	1	39.69	39.69	12.89*
Within Groups	42	129.30	3.08	
Total	45	248.11		

* $p < .001$.